

Lesson 3 Chem 10 Periodic table.notebook

Periodic Table

Non Metals
metalloids

	IA																	IIIA	IVA	VA	VIA	VIIA	VIIIA													
1	1 H 1.008																	11 B 10.81	12 C 12.011	13 N 14.007	14 O 15.999	15 F 18.998	16 Ne 20.179													
2	3 Li 6.941	4 Be 9.012																	17 Cl 35.45	18 Ar 39.948																
3	11 Na 22.990	12 Mg 24.305																	19 K 39.098	20 Ca 40.08	21 Sc 44.956	22 Ti 47.88	23 V 50.942	24 Cr 52.00	25 Mn 54.938	26 Fe 55.845	27 Co 58.933	28 Ni 58.69	29 Cu 63.546	30 Zn 65.38	31 Ga 69.723	32 Ge 72.64	33 As 74.922	34 Se 78.96	35 Br 79.904	36 Kr 83.80
4	19 K 39.098	20 Ca 40.08	21 Sc 44.956	22 Ti 47.88	23 V 50.942	24 Cr 52.00	25 Mn 54.938	26 Fe 55.845	27 Co 58.933	28 Ni 58.69	29 Cu 63.546	30 Zn 65.38	31 Ga 69.723	32 Ge 72.64	33 As 74.922	34 Se 78.96	35 Br 79.904	36 Kr 83.80																		
5	37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	(98) Tc	101 Ru 101.1	102 Rh 102.91	103 Pd 106.4	104 Ag 107.87	111 Cd 112.41	114 In 114.82	51 Sn 118.71	52 Sb 121.76	53 Te 127.60	54 I 126.90	55 Xe 131.29																		
6	55 Cs 132.91	56 Ba 137.33	57 La 138.91	72 Hf 178.49	73 Ta 180.95	74 W 183.85	75 Re 186.21	76 Os 190.2	77 Ir 192.22	78 Pt 195.08	79 Au 196.97	80 Hg 200.59	81 Tl 204.38	82 Pb 207.2	83 Bi 208.98	84 Po 209	85 At 210	86 Rn 222																		
7	87 Fr (223)	88 Ra 226.03	89 Ac 227.03																																	

Transition metals

Lanthanide Series													
58	59	60	61	62	63	64	65	66	67	68	69	70	71
Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
140.12	140.907	144.24	(145)	150.36	151.96	157.25	158.93	162.50	164.93	167.26	168.93	173.04	174.967
Actinide Series													
88	89	90	91	92	93	94	95	96	97	98	99	100	101
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr
232.04	231.0369	238.03	237.05	(244)	(243)	(247)	(247)	(251)	(252)	(257)	(258)	(259)	(260)

Elements & the Periodic Table

Periodic Table = a structured arrangement of elements that are arranged in order of increasing atomic number. This helps explain the element's physical and chemical properties.

Classifications:

Metals = solids at room temperature (except mercury), and are found towards the left side of periodic table. Good conductors of heat and electricity.

Nonmetals = some gases at room temp., some solids, and one liquid (bromine). Found toward the right side of table. Poor conductors.

Metalloids = Sometimes act like metals, and sometimes like non-metals.

Periods = the horizontal rows, each represents an electron's shell or orbit.

Groups / Families = the vertical columns which show the elements similarity in chemical properties. Each column has the same number of electrons in the outer shell (orbit).

Groups / Families to Remember:

Group 1 (Alkali metal) =

- (Li, Na, K, Rb, Cs, Fr)

Are very reactive with Group 17

React violently with water, releasing gas and heat.

Group 2 (Alkaline Earth Metals) =

- (Be, Mg, Ca, Sr, Ba, Ra)
- Shiny, silvery metals.

- Form compounds that do not dissolve in water.

Group 17 (Halogens) =

- (F, Cl, Br, I, At)
- Are non-metals,
- poisonous

- react with group 1 metals.
- Strong unpleasant odor and will burn flesh.
- Do not dissolve well in water.

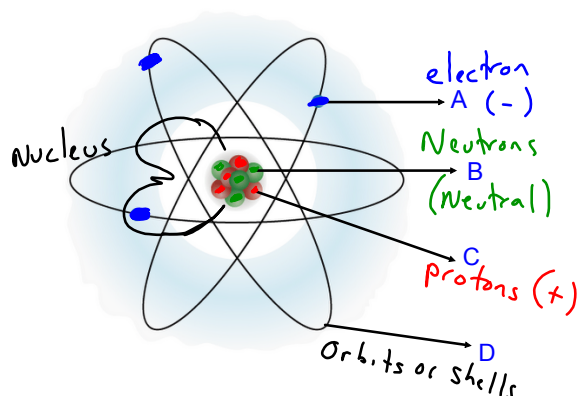
Group 18 (Noble Gases) =

- (He, Ne, Ar, Kr, Xe, Rn)
- Very stable
- don't react with other elements
- don't form compounds

Complete worksheet

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Structure of an atom



A. Electron - negatively charged particle

B. Neutron - uncharged particle

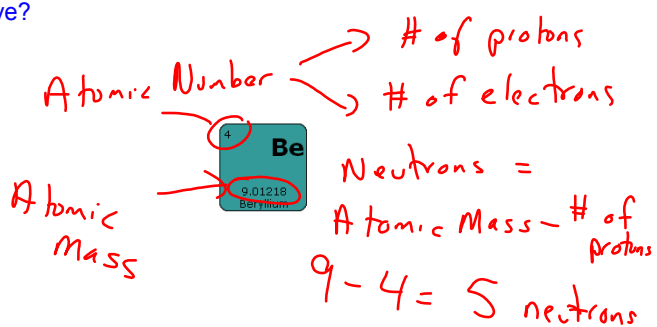
C. Proton - positively charged particle

* the neutrons and protons make up the nucleus of the atom

D. Orbit - the path which an electron travels around the nucleus of the atom

* Why don't the electrons take off away from the nucleus?

How many electrons neutrons and protons does each element have?



Protons - 16
Electrons - 16
Neutrons - 16
 $32 - 16 = 16$

26

Iron - P = 26

E = 26

N = 56 - 26 = 30